REMARKS

The applicants have had an opportunity to review the October 4, 2002 Office Action that rejects all of the pending claims on the basis of prior art. More particularly, claims 1-3, 5-12, and 14-20 are rejected as being unpatentable over Kosmatka, et al. - 5,506,471 ("Kosmatka") as modified by Arlt, et al., - 5,017,839 ("Arlt"), while claims 4 and 13 are rejected on the same combinations further modified by Fontana, et al. - 4,375,605 ("Fontana"). Upon objective review of the Office Action, prior art, and the claimed subject matter of the present application, it is respectfully asserted that the claims define over the prior art. Reexamination and reconsideration of the application as amended are respectfully requested.

The Examiner references Kosmatka for its teaching of an infrared reflective (IR) coating 44 associated with an incandescent light source i.e., a filament 22 disposed in ellipsoidal envelope portion 20. The IR coating is applied to the entire outer surface of the envelope and is intended to reflect "the infrared portion of the emitted radiation toward the filament to raise its temperature and improve the overall operating efficiency of the lamp" (column 3, lines 34-36). This type of prior art has already been acknowledged by the applicants (see page 1, lines 6-18).

The Examiner recognizes that Kosmatka does not disclose a totally reflecting coating disposed on at least one end of the envelope in surrounding relation to the filament. For such teaching, the Examiner relies on Arlt. That disclosure is directed to a metal-halide high-pressure discharge lamp. Again, such teaching was already recognized by applicants (page 1, lines 18-21).

As the Examiner well knows, the arc discharge and incandescent lamp are not as closely related as one may believe at first blush. The operating temperatures are substantially different, the optics and how light output from the light source is handled are significantly different. For example, an incandescent light source is treated as a line source while an arc discharge is a bulk or pool source. There are also significantly differently wave lengths of radiation being emitted under these different type of lamps. Thus, teachings from one type of light source/lamp are not easily or simply substituted into the other.

In addition, Arlt references in claim 8 that the coating is "zirconium dioxide" for reflecting both visible and invisible radiation upon operation of the lamp." Applicants

more specifically identified and selected claims highlight the difference between a specular coating and a diffusive coating, i.e., between a mirror-like or specular coating formed of a silver or aluminum coating, in combination with other limitations of the claims, when compared to a diffusive coating such as zirconium dioxide suggested by Arlt.

Claim 1, for example, is specifically limited to an incandescent arrangement since it requires a filament. This teaches away from the combination of Kosmatka with Arlt as suggested by the Examiner. Moreover, the totally reflecting coating is used to raise the temperature of a filament in the present application and Kosmatka, not an arc discharge pool as in Arlt. Thus, claim 1 and claims dependent therefrom are patentably distinct from Kosmatka whether modified by Arlt or other prior art of record.

Claim 4 is amended for reasons unrelated to patentability, and the limitations found therein include the incandescent nature of the lamp and location of the filament between the foci of the ellipsoidal portion of the lamp envelope. Dependent claims 8 and 9 more specifically refer to the preferred location of the totally reflective coating since the applicants noted the inability of the IR coating at low angles to effectively reflect the IR wavelength emitted from a line source filament. Thus, these features are recited in combination with other features in these claims.

With regard to amended claim 10, the incandescent light sources now includes a recitition that the envelope includes an ellipsoidal portion and the totally reflecting coating is more specifically identified as being formed as one of a silver or aluminum coating, i.e., a specular coating, for directing radiation toward the filament. This is in direct contrast to the zirconium oxide coating taught in Arlt. Thus, for all of the reasons noted above with regard to independent claim 1, and for this additional reason relative to the silver or aluminum coating, claim 10 defines over the prior art.

The dependent claims also add further limitations to the subject matter of claim 10 are thus patentable for those additional reasons.

With regard to claims 21-24, original claim 4 specified the location of the filament between the first and second foci of the ellipsoidal portion of the envelope. That limitation has been combined with the limitations of claim 1 in independent form as new claim 21. For all of the reasons noted above, claim 21, too, defines over any fair teaching attributable to Kosmatka, Arlt, or any of the remaining art of record. Dependent claims 22 - 24 more specifically highlight the extent of the total reflective coating on the ends of the envelope.

All formal and informal matters having been addressed, this application is condition for allowance. Early notice to that effect is earnestly solicited.

Respectfully submitted,

FAY, SHARPE, FAGAN,
MINNICH & McKEE, LLP

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Timothy E. Nauman
Reg. No. 32,283
1100 Superior Avenue
Seventh Floor
Cleveland, Ohio 44114-2518
Tel: (216) 861-5582
Fax: (216) 241-1666

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l/ja/ten/gec2489b.doc

Attachment: Exhibit A

In re Application of Laurence Bigio, et al.
For: IR COATED HALOGEN LAMP USING REFLECTIVE END COATS
Serial No.: 09/603,025
Filed: June 26, 2000

EXHIBIT A

IN THE SPECIFICATION:

Please amend the paragraph bridging page 3, line 18 to page 4, line 6, as follows:

Exemplary embodiments of the invention are shown in FIGURES 1 and 2 and illustrate a light source or lamp **100** comprising a double-ended envelope **102** having a central ellipsoidal portion and tubular portions extending form each end thereof and housing a filament **104**. The filament **104** is electrically and mechanically connected at first and second ends by first and second lead wires **100, 112**, respectively. The envelope **102** contains a halogen gas and a fill-gas. The halogen gas in the present invention is a halogen mixed with methyl bromide; however, other gas mixtures are encompassed by the scope of the present invention. The fill gas is preferably selected from the group consisting of xenon, krypton, argon and mixtures of these gases with nitrogen.

IN THE CLAIMS:

Cancel claims 6, 7, 15, and 16 from further consideration herein.

Amend claims 4, 10, 12, 13, and 19 as follows:

4. (Amended) The light source of claim 1 wherein the ellipsoidal portion having first and second foci associated therewith; and wherein the length of the filament fits substantially between the first and second optical foci for absorbing substantially all

of the radiation reflected from the infrared reflective filter and the totally reflecting coating.

10. (Amended) A light source comprising:

a lamp envelope made of a light transmissive material having an ellipsoidal portion;

a filament disposed within the envelope;

an infrared reflective filter coating disposed on at least a portion of the lamp envelope in surrounding relation to the filament;

a totally reflecting coating disposed on [and] an end of the envelope in surrounding relation to the filament formed of one of a silver and aluminum coating to direct radiation toward the filament.

12. (Amended) The light source of claim 10 wherein the totally reflecting coating is provided on [end regions of an ellipsoidal portion of the envelope and] tubular portions extending from opposite ends of the ellipsoidal portion.

13. (Amended) The light source of claim 12 wherein the ellipsoidal portion has first and second foci associated therewith; and wherein the length of the filament is located substantially between the first and second optical foci for absorbing substantially all of the radiation reflected from the infrared reflective filter and the totally reflecting coating.

19. (Amended) The light source of claim 18 wherein the totally reflecting coating is provided on end regions of [an] the ellipsoidal portion of the envelope and tubular portions extending from opposite ends of the ellipsoidal portion.

Add new claims 21-24 as follows:

21. A light source comprising:

a lamp envelope made of a light transmissive material, wherein the envelope has an ellipsoidal portion having first and second foci associated therewith and disposed centrally between tubular portions disposed on opposite ends of the ellipsoidal portion;

a filament centrally disposed within the envelope wherein the length of the filament fits substantially between the first and second optical foci for absorbing substantially all of the radiation reflected from the infrared reflective filter and the totally reflecting coating;

an infrared reflective filter coating disposed on at least a portion of the lamp envelope in surrounding relation to the filament; and

a totally reflecting coating disposed on at least one end of the envelope in surrounding relation to the filament.

22. The light source of claim 21 wherein the totally reflecting coating is disposed on both first and second ends of the envelope subtending an angle of 45° and less measured from an axis aligned with the filament.

23. The light source of claim 22 wherein the totally reflecting coating also extends over the tubular portions of the envelope.

24. The light source of claim 21 wherein the totally reflecting coating is disposed on both ends of the envelope subtending an angle from approximately 22° to 45° from an axis aligned with the filament.